APPENDIX

Claims 67, 68, 103, and 104 are canceled; and claims 51, 61-66, 69, 80-86, 97-102, 105, 113-115, 117-119, 122-124, and 129-131 are amended as shown below:

51. (Amended) A method for producing a nuclear transfer unit having genomic DNA of one [mammalian] ungulate species and mitochondria of a different [mammalian] ungulate species, comprising:

(i) [removing the genomic DNA from a mammalian] enucleating an ungulate oocyte;

(ii) inserting a differentiated [mammalian] ungulate donor cell, or the nucleus of said cell, into the oocyte under conditions suitable for the formation of a nuclear transfer unit so that a nuclear transfer unit is formed, wherein said oocyte and said differentiated cell are from different [mammalian] ungulate species;

(iii) activating the resultant nuclear transfer unit; and

(iv) culturing the activated nuclear transfer unit to produce a multicellular structure;

wherein said multicellular nuclear transfer unit develops into an ungulate animal having genomic DNA of one ungulate species and mitochondria of a different ungulate species upon being transferred into a female animal of the same species as the oocyte.

61. (Amended) The method of claim 51 wherein the differentiated donor cell [is a human cell] and the recipient oocyte are from ungulate animals of the same subfamily.

62. (Amended) The method of claim [51] 61 wherein the differentiated donor cell [is a human epithelial cell or a human keratinocyte] and the recipient oocyte are from bovine animals.

63. (Amended) The method of claim 51 wherein the differentiated donor cell is from [an ungulate] Bos gaurus.

64. (Amended) The method of claim 51, wherein the oocyte is [from a mammal selected from the group consisting of sheep, bovines, ovines, pigs, horses, rabbits, goats, guinea pigs, mice, hamsters, rats, and primates] an ungulate selected from the group consisting of bovines, ovines, porcines, equines, caprines, and buffalo.

65. (Amended) The method of claim 64, wherein the oocyte is from a [primate] bovine.

66. (Amended) The method of claim [51] 65, wherein the oocyte is from [an ungulate] Bos taurus.

69. (Amended) The method of claim [51] 62, wherein the differentiated donor cell is [a human cell] from Bos gaurus and the oocyte is [a bovine oocyte] from Bos taurus.

80. (Amended) The isolated embryonic cell of claim 79, which cell has [non-bovine] genomic DNA of a first ungulate animal and [bovine] mitochondria of a second ungulate animal that is of the same subfamily as the first ungulate animal.

81. (Amended) The isolated embryonic cell of claim [79] 80, which cell has [human] bovine genomic DNA and bovine mitochondria [of a non-human mammal].

82. (Amended) The isolated embryonic cell of claim [79] 81, which cell has [human] genomic DNA of Bos gaurus and [bovine] mitochondria of Bos taurus.

83. (Amended) An isolated embryonic cell which is not itself an embryo, which cell has genomic DNA of one ungulate species [of mammal] and mitochondria of a different ungulate species [of mammal].

84. (Amended) The isolated embryonic cell of claim 83, which cell has [human] genomic DNA of a first ungulate animal and [non-human] mitochondria of a second ungulate animal that is of the same subfamily as the first ungulate animal.

85. (Amended) The isolated embryonic cell of claim [83] 84, which cell has [human] bovine genomic DNA and bovine mitochondria.

86. (Amended) A method for producing a nuclear transfer unit having genetically altered genomic DNA of one [mammalian] ungulate species and mitochondria of a different [mammalian] ungulate species, comprising:

(i) obtaining a differentiated [mammalian] ungulate donor cell, the genome of which is genetically altered by addition, modification, substitution, or deletion of one or more genes;

(ii) [removing the genomic DNA from a mammalian] enucleating an ungulate oocyte;

(iii) inserting the genetically altered donor cell, or the nucleus of said cell, into the oocyte under conditions suitable for the formation of a nuclear transfer unit so that a nuclear transfer unit is formed, wherein said oocyte and said differentiated donor cell are from different [mammalian] ungulate species;

(iv) activating the resultant nuclear transfer unit; and

(v) culturing the activated nuclear transfer unit to produce a multicellular structure;

wherein said multicellular nuclear transfer unit develops into an ungulate animal having genetically altered genomic DNA of one ungulate species and mitochondria of a different ungulate species upon being transferred into female animal of the same species as the oocyte.

97. (Amended) The method of claim 86 wherein the differentiated donor cell [is a human cell] and the recipient oocyte are from ungulate animals of the same subfamily.

98. (Amended) The method of claim [86] 97 wherein the differentiated donor cell [is a human epithelial cell or a human keratinocyte] and the recipient oocyte are from bovine animals.

99. (Amended) The method of claim [86] 98 wherein the differentiated donor cell is from [an ungulate] from Bos gaurus.

100. (Amended) The method of claim 86, wherein the oocyte is [from a mammal selected from the group consisting of sheep, bovines, ovines, pigs, horses, rabbits, goats, guinea pigs, mice, hamsters, rats, and primates] an ungulate selected from the group consisting of bovines, ovines, porcines, equines, caprines, and buffalo.

101. (Amended) The method of claim 100, wherein the oocyte is from a [primate] bovine.

102. (Amended) The method of claim [86] 102, wherein the oocyte is from [an ungulate] Bos taurus.

105. (Amended) The method of claim [86] 98, wherein the differentiated donor cell is [a human cell] from Bos gaurus and the oocyte is [a bovine oocyte] from Bos taurus.

113. (Amended) The isolated cell of claim 112, which cell has genetically altered[, non-bovine] genomic DNA of a first ungulate animal and [bovine] mitochondria of a second ungulate animal that is of the same subfamily as the first ungulate animal.

114. (Amended) The isolated cell of claim [112] 113, which cell has genetically altered[, human] bovine genomic DNA and bovine mitochondria [of a non-human mammal].

115. (Amended) The isolated cell of claim [112] 114, which cell has genetically altered[, human] genomic DNA of Bos gaurus and [bovine] mitochondria of Bos taurus.

117. (Amended) An isolated embryonic cell which is not itself an embryo, which cell has genetically altered genomic DNA of one ungulate species [of mammal] and mitochondria of a different ungulate species [of mammal].

118. (Amended) The isolated embryonic cell of claim 117, which cell has genetically altered[, human] genomic DNA of a first ungulate animal and [non-human]

mitochondria of a second ungulate animal that is of the same subfamily as the first ungulate animal.

119. (Amended) The isolated embryonic cell of claim [117] 118, which cell has genetically altered[, human] bovine genomic DNA and bovine mitochondria.

122. (Amended) The cell of claim 121, which cell has [non-bovine] genomic DNA of a first ungulate animal and [bovine] mitochondria of a second ungulate animal that is of the same subfamily as the first ungulate animal.

123. (Amended) The cell of claim [121] 122, which cell has [human] bovine genomic DNA and bovine mitochondria [of a non-human mammal].

124. (Amended) The cell of claim [121] 123, which cell has [human] genomic DNA of Bos gaurus and [bovine] mitochondria of Bos taurus.

129. (Amended) The cell of claim 128, which cell has genetically altered[, non-bovine] genomic DNA of a first ungulate animal and [bovine] mitochondria of a second ungulate animal that is of the same subfamily as the first ungulate animal.

130. (Amended) The cell of claim [128] 129, which cell has genetically altered[, human] bovine genomic DNA and bovine mitochondria[of a non-human mammal].

131. (Amended) The cell of claim [128] 130, which cell has genetically altered[, human] genomic DNA of Bos gaurus and [bovine] mitochondria of Bos taurus.